



Factors associated with alcohol consumption among medical cannabis patients with chronic pain



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HIGHLIGHTS

- Among chronic pain patients using medical cannabis, 26% were high-risk drinkers
- Those with less pain severity/disability had greater odds of being a high-risk drinker.
- Providers should assess alcohol consumption among patients using medical cannabis.
- Future studies should examine the efficacy of alcohol interventions in this population.

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ABSTRACT

Introduction: Chronic pain is the most common reason for medical cannabis certification. Data regarding alcohol use and risky drinking among medical cannabis patients with pain is largely unknown. Therefore, we examined the prevalence and correlates of alcohol use and risky drinking in this population.

Methods: Participants completed surveys regarding demographics, pain-related variables, anxiety, cannabis use, and past six-month alcohol consumption. Alcohol use groups were defined using the AUDIT-C [i.e., non-drinkers, low-risk drinkers, and high-risk drinkers (≥ 4 for men and ≥ 3 for women)] and compared on demographic characteristics, pain measures, anxiety, and cannabis use.

Results: Overall, 42% ($n = 330/780$) were non-drinkers, 32% ($n = 251/780$) were low-risk drinkers, and 26% ($n = 199/780$) were high-risk drinkers. Compared to non-drinkers, low- and high-risk drinkers were significantly younger whereas a larger proportion of low-risk drinkers reported being African-American compared to non- or high-risk drinkers. High-risk drinkers reported significantly lower pain severity/interference compared to the other groups; high-risk drinkers were also less likely to be on disability compared to other groups. A multinomial logistic regression showed that patients reporting lower pain severity and less disability had greater odds of being classified a high-risk drinker.

Conclusions: High-risk drinking appears common among medical cannabis patients. Future research should examine whether such use is concurrent or consecutive, and the relationship of such co-use patterns to consequences. Nevertheless, individuals treating patients reporting medical cannabis use for pain should consider alcohol consumption, with data needed regarding the efficacy of brief alcohol interventions among medical cannabis patients.

1. Introduction

The landscape of cannabis use in the United States (US) has shifted dramatically over the past few decades. To date, 28 states and the District of Columbia have allowed legal access to medical cannabis

(National Conference on State Legislatures: State Medical Marijuana Laws, 2016), all of which include pain, pain-related syndromes, or other “debilitating conditions” as qualifying reasons for which medical cannabis can be recommended. Additionally, far more patients seek medical cannabis for pain than for any other approved condition (Davis

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et al., 2016; Ilgen et al., 2013). Moreover, approximately 40% of medical cannabis patients also report drinking alcohol (Perron, Bohnert, Perone, Bonn-Miller, & Ilgen, 2015), which is not surprising given that both alcohol and cannabis have been reported as methods to self-medicate, or control, pain (Alford et al., 2016). Given the substantial body of evidence (Antai, Lopez, Antai, & Anthony, 2014; Dubois, Mullen, Weaver, & Bédard, 2015; National Cancer Institute: Cancer Trends Progress Report, 2016; Rehm, 2009; Schuckit, 2009) linking high-risk drinking (defined as drinking > 3 drinks on any single day and > 7 drinks per week for women, and drinking > 5 drinks on any single day and > 14 drinks per week for men, National Institute on Alcohol Abuse and Alcoholism, 2017) with negative biopsychosocial outcomes, data characterizing medical cannabis patients who drink alcohol at potentially harmful levels are urgently needed to inform harm reduction approaches in this population.

To date, a paucity of studies have examined the prevalence and correlates of alcohol use and risky drinking among medical cannabis patients. For example, studies show that approximately 14% of medical cannabis patients screened positive for high-risk drinking on the Alcohol Use Disorders Identification Test (AUDIT > 8) (Ilgen et al., 2013; Perron et al., 2015). However, these studies have not reported the prevalence of alcohol consumption based on more recently recommended AUDIT-C cut-offs, namely non-drinkers, low-risk drinkers (≤ 2 for women, ≤ 3 for men), and high-risk drinkers (≥ 3 for women, ≥ 4 for men), nor have they examined what factors might be associated with high-risk drinking among medical cannabis patients experiencing chronic pain.

Although we found no studies about correlates of *medical* cannabis use and alcohol consumption, studies of those who consume alcohol and *non-medical* (e.g., recreational) cannabis indicate that approximately two-thirds of the US general population who use cannabis at least monthly also reported usually (or always) using alcohol and cannabis at the same time (Subbaraman & Kerr, 2015). Although it is not always reported whether alcohol and non-medical cannabis use is concurrent (i.e., use occurs at the same time) or consecutive (i.e., use does not occur at the same time), in general people who consume both substances are more likely to be younger, unemployed, single, drink more frequently and heavily, and report experiencing more alcohol-related social consequences and harms (e.g., problems related to relationships or occupation), compared to those who consume only alcohol (Subbaraman & Kerr, 2015). Moreover, although evidence suggests that concurrent use is associated with double to triple the odds of drunk driving compared to consecutive use, both types of polysubstance use patterns are associated with experiencing alcohol-related psychosocial consequences (Subbaraman & Kerr, 2015). Not only could co-occurring alcohol and cannabis use be associated with a variety of negative outcomes among medical cannabis patients, but when heavier amounts of alcohol are consumed, it may also predispose these patients to misuse or become dependent on cannabis or other substances (Pergolizzi et al., 2012). Thus, providing alcohol interventions (O'Donnell et al., 2014; Sullivan, Tetrault, Braithwaite, Turner, & Fiellin, 2011) to medical cannabis patients who engage in risky drinking could decrease these negative outcomes.

1.1. Current study

Although data provide initial evidence suggesting that meaningful proportions of medical cannabis patients are drinking alcohol at risky levels (Ilgen et al., 2013; Perron et al., 2015), and given the possible negative outcomes associated with alcohol and *non-medical* cannabis use (Subbaraman & Kerr, 2015), additional data are needed to better characterize the problem of high-risk drinking among medical cannabis patients in order to inform future studies examining the utility of brief alcohol interventions in this population. Therefore, the primary aim of this study is to evaluate the prevalence of alcohol use (including low-risk and high-risk drinking) among medical cannabis patients with pain

and to identify differences in demographic, pain experience variables, anxiety, and substance use, between non-drinkers, low-risk drinkers, and high-risk drinkers.

2. Method

2.1. Participants and procedure

The current study presents cross-sectional, baseline data from a longitudinal cohort study of medical cannabis patients in Michigan who have obtained certification to use cannabis for moderate/severe pain. Patients presenting to two study sites (i.e., medical cannabis clinics) were approached by study staff between February 2014 and June 2015 and completed screening measures during a clinic visit (see Cranford, Bohnert, Perron, Bourque, & Ilgen, 2016). Inclusion criteria included seeking initial or renewal certification for medical cannabis as a treatment for pain, reporting pain of at least 5 out of 10 on a numeric rating scale (0–10; Farrar, Young, LaMoreaux, Werth, & Poole, 2001), and being 21 years of age or older. Exclusion criteria included being pregnant or reporting seeking medical cannabis for Alzheimer's disease or cancer. The study was approved by the University of Michigan Medical School Institutional Review Board and a Certificate of Confidentiality was obtained from the National Institute of Health.

3. Measures

3.1. Main outcome measure

3.1.1. Alcohol Use Disorders Identification Test-Consumption (AUDIT-C)

The 3-item AUDIT-C measures alcohol consumption [frequency, quantity, and binge-drinking (defined as ≥ 6 drinks on any one occasion)] during the past six months (Bush, Kivlahan, McDonnell, Fihn, & Bradley, 1998). Cronbach's α in the present sample was 0.76. Consistent with prior work, AUDIT-C scores were summed and non-drinkers are classified when scores = 0; low-risk drinkers are classified by scores ≤ 2 for women, ≤ 3 for men and high-risk drinkers were classified by scores ≥ 3 for women and ≥ 4 for men (Bradley et al., 2007; Dawson, Smith, Saha, Rubinsky, & Grant, 2012).

3.2. Other measures

3.2.1. Demographic characteristics

Participants provided data on their sex, race, age, employment status (i.e., full-time, part-time, self-employed, on disability, etc.), relationship status, and education level.

3.2.2. West Haven – Yale Multidimensional Pain Inventory (WHYMPI)

Two subscales from the WHYMPI were used to evaluate perceived level of pain severity and interference (Kerns, Turk, & Rudy, 1985). Pain severity was assessed using three items (i.e., “Level of pain at the present moment,” “Severity of pain during the last week on average,” “How much suffering do you experience as a result of your pain”). Pain interference was assessed using nine items (e.g., “...how much do pain problems interfere with day to day activities,” “...how much has pain changed your ability to work”). Response options vary by item but are measured on a 7-point scale from “0 = No pain/No interference/Not at all severe” to “6 = Very intense pain/Extreme Interference/Extremely Severe.” Average scores were calculated for each subscale; Cronbach's α was 0.92 for the Pain Severity subscale, and 0.75 for the Pain Interference subscale.

3.2.3. Generalized Anxiety Disorder – 7 (GAD-7)

The GAD-7 was used to measure general anxiety symptoms (e.g., “Not being able to stop or control worrying,” “Feeling nervous, anxious, or on edge”) consistent with the criteria set forth in the DSM-IV (Spitzer, Kroenke, Williams, & Lowe, 2006). Participants rated how

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